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ABSTRACT

This checklist offers tips and resources to help schools identify opportunities to "green" their buildings and operations, focusing on common-sense improvements that schools can make in their daily operations to minimize or stop potential health and environmental problems before they start. The first section discusses the benefits of a green school program. The second section highlights management strategies. The list of environmental strategies includes: energy use; solid waste generation; indoor air quality; hazardous materials; mercury use; pest management; mold growth; water consumption; laboratory waste; building construction/renovation; purchasing; groundskeeping; and food service. Each section presents a list of strategies, a "Did you know?" box, and referrals for obtaining further information. (SM)

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Green Schools Checklist: Environmental Actions for Schools to Consider

Is your school interested in reducing environmental impacts, improving learning conditions and lowering operating costs, all at the same time? Illinois EPA's *Green Schools Checklist* offers tips and resources to help schools identify opportunities to "green" their buildings and operations, ranging from the solid waste they generate, to the indoor environment they provide, to the energy and supplies they consume.

This checklist focuses on common-sense improvements that schools can make in their daily operations that will minimize or stop potential health and environmental problems before they start. The emphasis has been placed on prevention-oriented strategies, which are preferable to dealing with wastes and pollutants after the fact.

The environmental improvement strategies in this checklist have been organized into several categories, including:

- Energy use,
- Solid waste generation,
- Indoor air quality,
- Pest management,
- Mold growth,
- Water consumption,
- Laboratory waste,
- Building renovation,
- Purchasing.

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The strategies, organizations and links cited in the checklist have been gathered from a variety of sources. They have been compiled to help administrators, facility staff, teachers and students raise awareness and promote environmentally sustainable practices within their schools. This checklist also contains tips on how to organize and secure support for an environmental improvement initiative.

Benefits of a Green School Program

A green schools program is good for everyone involved. In addition to protecting students from environmental health and safety risks, it can help save money and increase efficiency. Schools that make environmentally healthy practices a top priority can realize many of the following benefits:

- Save money through reduced consumption of goods and energy savings,
- Increase efficiency of operations and use of resources,
- Create favorable learning and teaching conditions,
- Generate community goodwill,
- Avoid future liability problems,
- Educate the next generation on the value of caring for the environment.

Full text available at:
http://www.epa.state.il.us/green-illinois/green-schools/green-schools-checklist.pdf

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This checklist is not intended to be a comprehensive list of all of the techniques and practices that can potentially improve the way a school conducts business. Each school is unique, with its own set of environmental challenges and opportunities. Thus, the checklist has been designed to be flexible enough to conform to the specific conditions and needs of your school.

The chances are you will not be able to solve all the environmental challenges facing your school at one time. Start with the easier strategies that will have the greatest impact; in other words, "think big, start small." Once you have built momentum, you can expand your environmental program to other areas.

If you would like assistance in greening your school, please contact the Illinois Environmental Protection Agency's Office of Pollution Prevention at 217-782-8700.

Management Strategies

☐ Create top management support by adopting an environmental policy statement for your school.

☐ Appoint a person to coordinate or "champion" your green school program. This person should be open to change, have a commitment to the environment and possess the ability to communicate well with all levels of the school.

Did you know? A lot of people spend a lot of time in school buildings. According to the U.S. Environmental Protection Agency, nearly 55 million people – one out of five people in this country – spend their days in school buildings as students, teachers, administrators and staff.

☐ Establish a team of employees and students to identify and brainstorm environmental improvement ideas. Making changes in the way your school uses materials, energy and water should not be just one person's responsibility.

☐ Conduct a facility "walkthrough" or self-evaluation to assess current environmental conditions and identify areas for improvement.

☐ Identify operations where large quantities of water and energy are used, and those that generate a high volume of waste, and assign priority action to be taken in those areas.

☐ Seek employee and student suggestions, and find other ways to involve them in your environmental program (e.g., create a poster or slogan contest).

☐ Identify curriculum tie-ins.

☐ Create incentives, rewards or recognition for employees and students who take a leadership role in you school's greening efforts.

Did you know? It has been estimated that total utility costs for schools, including fuel, water, wastewater and trash disposal, averages $140 per student per year.

☐ Provide training to staff and students, if applicable, for new products and processes.

☐ Track and report your environmental progress. Look at what resources your schools uses and what it wastes. Try to calculate and quantify the savings potential of your environmental efforts.

☐ Build permanence into your green school program. Make your efforts long lasting by incorporating environmental improvement into core operations and curriculum.

☐ Seek recognition for your environmental efforts and share your experience with other schools. Celebrate your achievements.

For more information:

Oregon Department of Environmental Quality, Oregon Green Schools Tools
http://www.deq.state.or.us/wmc/solwaste/education/schtools.html

Alliance to Save Energy, Green Schools, Getting Started
www.ase.org/greenschools/start.htm

San Mateo County (CA) Recycle Works, Performing a School Waste Audit
http://www.recycleworks.org/schools/s_audits.html

Green Business Network, Greening Your Business: A Primer for Smaller Companies
http://www.greenbiz.com/toolbox/tools_third.cfm?LinkAdvID=21973

Natural Resources Defense Council, The Green Squad: Kids Taking Action for Greener, Healthier Schools
Http://www.nrdc.org/greensquad/default.htm

Energy Use

☐ Conduct an energy audit. Contact your energy utility, an energy services company, the Illinois Department of Commerce and Community Affairs' Energy Bureau, or Illinois EPA's Office of Pollution Prevention to arrange a site visit. Consider involving students in the audit as a learning project.

Did you know? According to the U.S. Department of Energy, American schools spend roughly $6 billion each year on energy – or approximately $110/student/year. For most school districts, energy use is the second biggest operating expense. The department estimates schools can save 25% of these high costs through better building design and energy efficiency improvements.

☐ Make sure your building systems (e.g., boilers, fans and pumps) are operating efficiently. Optimize efficiency through regular inspections and preventative maintenance.

☐ Use compact fluorescent bulbs instead of standard incandescent "screw-in" bulbs.

☐ Clean lights and fixtures every two years to keep light output high.

☐ Convert to higher efficiency fluorescent lamps and electronic ballasts for most general lighting applications.

☐ Take advantage of natural light or daylighting, particularly when a school undergoes significant remodeling or when new structures are added.

☐ Consider high intensity discharge lights (e.g., high pressure sodium) instead of standard fluorescent lights for outdoor areas.

☐ Replace incandescent bulbs in exit signs with a light-emitting diode (LED) or compact fluorescent replacement kit.

☐ Install double pane windows and/or windows with a low-emission coating.

☐ Plug holes and caulk windows to stop heat loss.

Did you know? Indian Prairie School District 204 in Chicago's western suburbs saved $1.4 million by improving energy efficiency habits and reducing energy demand when buildings are unoccupied.

☐ Replace damaged doors and windows to reduce the need for heating and cooling in the building.

☐ Turn off lights in unoccupied rooms and machines during non-use hours.

☐ Consider time clocks, occupancy sensors, and dimming controls to reduce lighting energy.

☐ Regulate energy input according to desired energy levels.

☐ Investigate variable speed drives for fans and pumps.

☐ Turn off the light in vending machines.

☐ Create a work order system to report climate control problems that may require service.

For more information:

Illinois Department of Commerce and Community Affairs, Energy Division, Energy Efficiency in Schools/Institutions
www.commerce.state.il.us/com/energy/school.html

U.S. Department of Energy, Energy Efficiency and Renewable Energy Network, Energy Smart Schools
http://www.eren.doe.gov/energysmartschools/index.html

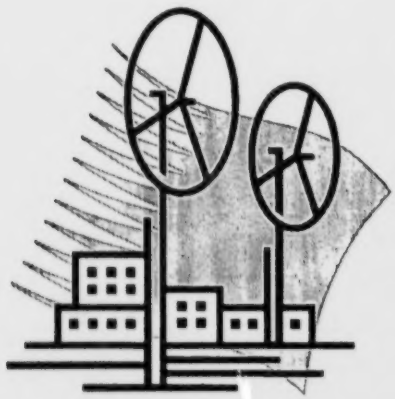
Alliance to Save Energy, Green Schools: Using Energy Efficiency to Strengthen Schools
http://www.ase.org/greenschools/spirit/index.htm

U.S. Department of Energy, Office of Building, Technology, State and Community Programs, How to Guide: Maximize Energy Savings in School Buildings
http://www.eren.doe.gov/buildings/state_energy/pdfs/a1_schools.pdf

EnergyNet, Energy Efficiency Curriculum and Resource Materials for Schools
http://www.energynet.net/eninfo/national_invitation.html

School Facilities.com, School Energy Conservation Ideas
http://www.schoolfacilities.com/resourceDetails.asp?mode=5&resourceID=79#

U.S. EPA, Energy Star™ for Schools
http://yosemite1.epa.gov/estar/business.nsf/webmenus/Schools



Indoor Air Quality

☐ Inspect ventilation equipment air filters regularly and replace as needed.

☐ Specify maintenance supplies (paints, finishes, cleaners, caulks, sealants) that are low-emitters of potential indoor air contaminants. Ask vendors and manufacturers to help select the safest products available that can accomplish the job effectively.

Did you know? The U.S. General Accounting Office has found that 15,000 schools suffer from poor indoor air quality, affecting more than eight million children or one in five children in America's schools.

☐ Use carpet adhesives or adhesive free systems that minimize the amount of off-gassing of chemicals during installation of carpeting.

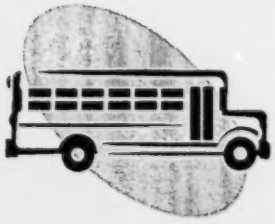
☐ Avoid wood products and furnishings that use large amounts of formaldehyde as a bonding agent.

☐ Clean spills promptly.

☐ Seal containers of volatile liquids.

☐ Ensure that the ventilation system is clean and that an adequate amount of outdoor air is supplied to occupied areas.

☐ Ensure that the mechanical rooms are free of trash and chemicals.



☐ Make sure the air intakes of ventilating systems are not in an area where cars or buses idle.

☐ Eliminate any bird or animal nests or droppings near outdoor air intakes.

☐ Check for cooking odors or smoke in areas adjacent to the cooking, preparation, and eating areas.

☐ Monitor trends in health complaints, especially in timing or location of complaints.

☐ Avoid tracking pollutants into work areas and seal off work areas from occupied portions of the building.

☐ Consider recessed grates, "walk off" mats and other techniques to reduce the amount of dirt entering the building.

☐ Clean up dust generated from construction activities.

For more information:

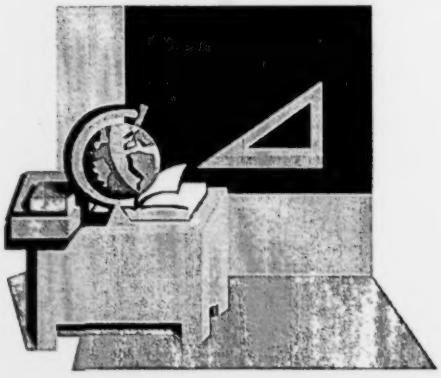
U.S. EPA, Indoor Air Quality Tools for Schools Kit
http://www.epa.gov/iaq/schools/index.html

National Safety Council, Environmental Health Center, Teacher's Guide to Indoor Air Quality
http://www.nsc.org/ehc/indoor/teachers.htm

National Education Association, Health Information Network
http://www.neahin.org/programs/environmental/iaq.htm

Healthy Schools Network, Guides and Materials
http://www.healthyschools.org/guides_materials.html

Illinois Healthy Schools Campaign, Resource List
http://www.healthyschoolscampaign.org/resources.htm



Solid Waste

☐ Encourage practices that reduce waste paper (e.g., proofing documents on the computer screen before printing; storing final documents on disk rather than making final copies; making two sided copies; printing letters and reports on both sides of the page; and reusing paper that is clean on one side for in-house drafts and message pads).

Did you know? Schools and educational facilities can be one of the largest waste generators in some communities.

☐ Consider a limited or facility-wide waste audit to provide information on the individual components of the solid waste stream. Get students involved as a learning project.

☐ Minimize packaging waste by specifying returnable or reduced packaging in supply agreements, particularly for items purchased in large quantities.

☐ Use electronic mail to send messages instead of written memos, whenever possible. Encourage employees to save e-mail documents electronically.

☐ Do research at libraries or on-line, rather than ordering written materials.

☐ Avoid using cover sheets to send fax transmittals.

☐ Recycle items, such as paper, aluminum cans, cardboard and plastic bottles.

☐ Save used manila envelopes and file folders for in-house reuse.

☐ Keep a supply of extra mugs and glasses in common areas.

Did you know? According to the Oregon Resource Efficiency Program, each school student produces about 240 pounds of waste per year or about 1.33 pounds a day in a 180-day school year. Mixed paper is by far the largest waste component.

☐ Update mailing lists for annual reports and newsletters. A mailing list over two years old may be unreliable.

☐ Reduce junk mail by taking your school name off unwanted mailing lists.

☐ Share periodicals with associates instead of receiving multiple copies.

☐ Donate old or outdated equipment, books or furniture to local community organizations.

☐ Use rechargeable batteries and solar calculators.

☐ Consider worm bins for indoor composting as a class project. Properly-managed worm bins are odor free.

☐ Consider leasing equipment from manufacturers that will take back and properly recycle their goods at the "end of their useful life."

- ☐ Save and reuse boxes for shipping and other uses.
- ☐ Consider a printer that can print on both sides of the paper at once.
- ☐ Post minutes or other handouts on an Intranet site, or circulate them electronically after the meeting.
- ☐ Save on paper by using chalkboards and overhead projectors for student worksheets, quizzes, etc.
- ☐ Have students answer questions on scrap paper.
- ☐ Distribute disk handouts to eliminate paper waste.
- ☐ Encourage students to bring their lunch in reusable containers.
- ☐ Set up "swap" areas in classrooms to share reusable materials.

- ☐ Work with janitorial staff to practice resource efficiency, such as reusing plastic garbage can liners in rooms that generate only dry waste, buying bulk cleaning supplies and using plastic refillable spray bottles.
- ☐ Establish environmentally friendly guidelines for all purchases, including: products made from recycled materials, with minimal packaging; that can be recharged, refilled, or reused; have longer lifetimes; or can be easily repaired.

For more information:

University of North Carolina, Environmental Resources Program, Beyond Recycling: A Waste Reduction Manual for Schools
http://www.p2pays.org/ref/02/01432.htm

U.S. EPA, WasteWise Program
http://www.epa.gov/epaoswer/non-hw/reduce/wstewise/index.htm

Inform Inc., Waste at Work: Prevention Strategies for the Bottom Line
http://www.informinc.org/wasteatwork

San Mateo County (CA) Recycle Works, Tips for a No Waste Lunch at Home and at School
http://www.recycleworks.org/schools/lunch.html

Recycling Council of Ontario, Waste Reduction Fact Sheet for Schools
http://www.p2pays.org/ref/20/19856.htm

Illinois Recycling Association, Resource List
http://www.ilrecyclingassn.org/

Resource Recycling (November 1999), Food Waste Composting: Institutions Get a Taste
http://www.p2pays.org/search/pdfframe.asp?pdfurl=/ref/04/03229.pdf

University of Illinois, Classroom Worm Composting
http://www.urbanext.uiuc.edu/worms/neighborhood/index.html

Hazardous Materials

- ☐ Inspect raw material upon receipt from suppliers.
- ☐ Store chemicals properly to avoid unauthorized use or spills.
- ☐ Purchase only the needed amounts of chemical supplies to avoid disposing of extra, unused materials.
- ☐ Keep lids on containers of liquids to reduce evaporation.
- ☐ Use the least amount of product to complete the job.
- ☐ Employ "first-in, first-out" policy for expendable materials to keep them from becoming outdated.
- ☐ Check that all purchases have dated, legible labels.
- ☐ Stack containers in a way that minimizes the chance for tipping, puncturing or breaking.
- ☐ Do not mix chemical and hazardous wastes with everyday trash, pour them down the drain, or dump them on the ground.
- ☐ Keep storage and work areas clean and well organized.
- ☐ Dispense and transfer materials using spigots, pumps and funnels.
- ☐ Store containers to allow for visual inspection of corrosion and leaks.
- ☐ Regularly inspect dumpsters and compactors for spills and stains.
- ☐ Cover waste disposal areas and recycling bins to avoid rainwater infiltration.
- ☐ Store oil cans, paint cans and other liquid materials with like substances in drip pans or trays to catch leaks and spills.

For more information:

U.S. EPA Region V, Pollution Prevention Education Toolbox, Household Hazardous Waste Reduction
http://www.epa.gov/reg5rcra/wptdiv/p2pages/hhw.pdf

New Hampshire Department of Environmental Services, Best Management Checklist for Chemicals in Schools
http://www.des.state.nh.us/nhppp/school_checklist.pdf

Mercury Use

- ☐ Perform an inventory of mercury materials in science labs, maintenance areas, art rooms, nurse's office, home economic rooms, and industrial arts/metal shop areas.
- ☐ Label instruments containing mercury.
- ☐ Train staff on how to properly clean up a mercury spill. Mercury spill kits are available from many scientific supply catalogs.

Did you know? Improper handling of mercury can cause significant financial costs. A school in Connecticut was evacuated and paid $6,000 to clean up 12 broken laboratory thermometers. At an Illinois school, a student removed mercury from a chemical storage room and spread it around the school. Areas of the school were closed for approximately two weeks and cleanup costs exceeded $250,000.

- ☐ Ensure that mercury and mercury containing products are not disposed of down the drain.
- ☐ Create protocol to properly manage and recycle mercury and mercury containing products. Go for the easiest targets first. Eliminate liquid mercury, and then replace instruments that contain the largest amounts of mercury.
- ☐ Establish a mercury-free purchasing policy that chooses non-mercury products over those that contain mercury. If no mercury free alternative is available, choose the product containing the least amount of mercury available for that particular device.
- ☐ Clean historical mercury out of traps, sumps and pipes in your sewer lines. Whenever plumbing parts are removed or cleaned, caution should be taken to avoid spills. Follow proper mercury handling and disposal/recycling procedures.
- ☐ When remodeling or replacing old equipment, replace thermostats, switches, relays, sensors and gauges containing mercury with non-mercury alternatives.

For more information:

U.S. EPA Region V, Mercury in the Environment
http://www.epa.gov/grtlakes/p2/mercpam.html

University of Wisconsin Extension and Hazardous Waste Center, Mercury in Schools Program
http://www.mercuryinschools.uwex.edu/index.htm

Northeast Waste Management Officials Organizations, Mercury in Schools and Communities
http://www.newmoa.org/newmoa/htdocs/prevention/mercury/schools

Illinois EPA, Mercury-Free Alternatives for Schools
http://www.epa.state.il.us/p2/fact-sheets/index.html

Illinois Department of Public Health, Mercury in Schools
http://www.idph.state.il.us/envhealth/pdf/mercuryschool.pdf

Laboratory Waste

- ☐ Conduct a chemical inventory to help eliminate over-purchasing and reduce disposal costs of unneeded, out-of-date chemicals.
- ☐ Reduce the quantity of hazardous chemicals stored in your facility to the minimum necessary for quality instruction.

- ☐ Purchase chemicals in smaller lots and quantities. Delegate purchasing responsibility to one person or a single point of contact.
- ☐ Substitute non- or less-hazardous chemicals for more hazardous ones in science experiments. If this is not possible, use micro-scale chemistry techniques to reduce scale of experiments (and associated quantities of chemicals).
- ☐ Substitute computer simulations, videos, etc. for actual experiments.
- ☐ Purchase lab specimens in non-formaldehyde preservatives, whenever possible.
- ☐ Link purchasing requests into a centralized inventory system to help control the volume of chemicals, eliminate duplicate orders and ensure that excess chemicals in stock can be used before buying more.
- ☐ Establish a safe management system for remaining required chemicals.
- ☐ Adopt a standard labeling procedure for chemicals and waste.
- ☐ Designate a centralized place for chemical storage and another for waste storage, with spill containment.

- ☐ Store chemicals according to their chemical family, not alphabetically.
- ☐ Return expired material to supplier.
- ☐ Periodically inspect stored chemicals for signs of leakage, rusting, peeled labels, poor storage practices, or any other problems.
- ☐ Install spill and leak protection in chemical storerooms.

For more information:

New Hampshire Department of Environmental Services, Guidance for Managing Chemicals in New Hampshire School Science Laboratories
http://www.des.state.nh.us/nhppp/chem_schools_guidance.htm

Battelle Seattle Research Center, Laboratory Waste Minimization and Pollution Prevention
http://www.p2pays.org/ref/01/text/00779/index2.htm

Council of State Science Supervisors, Science Education Safety
http://csss.enc.org/safety.htm

Illinois Waste Management and Research Center, Illinois Green Chemistry
http://www.wmrc.uiuc.edu/gchemistry/

National Microscale Chemistry Center
http://www.silvertech.com/microscale/index.html

Mold Growth

- ☐ Establish a regular schedule for inspecting roofs, ceilings, walls, floors and carpeting for water leakage, stains or discoloration, and mold growth or odors.

- ☐ Check the mechanical room and roof for leaks and spills.
- ☐ Fix the source of the water problem or leak to prevent mold growth.
- ☐ Vent showers and other moisture-generating sources to the outside.
- ☐ Reduce the potential for water vapor condensation on walls, underside of roof decks and around pipes or ducts.
- ☐ Keep building materials like wood, porous insulation, paper and fabric dry.
- ☐ Prevent rain and snow from entering air intakes.
- ☐ Provide adequate ventilation to maintain indoor humidity levels between 30%-50%.
- ☐ In areas with high humidity levels, consider switching the air conditioning system to a setback system at night.

- ☐ Use exhaust fans whenever cooking, dishwashing and cleaning in food service areas.
- ☐ Avoid standing water in ventilation systems, air conditioning or refrigerator drip pans.
- ☐ Avoid carpeting in areas where there is a perpetual moisture problem.
- ☐ Clean and dry any damp or wet building materials and furnishings within 28-48 hours of occurrence.
- ☐ Inspect bathrooms (especially around and under sinks) for signs of standing water, water stains or mold.

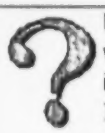
For more information:

U.S. EPA, Mold Prevention in Schools
http://www.epa.gov/iaq/molds/prevention.html

Environmental Building News, Mold in Buildings: What It Is and How to Keep It Out
http://www.buildinggreen.com/ebn/sum/10-6.html

Water Consumption

- ☐ Ask an employee to monitor water use, or have students conduct a water use audit as part of a learning project.
- ☐ Install submeters to major building water users to monitor efficiency and identify leaks.
- ☐ Encourage students and teachers to report water leaks to the maintenance staff.
- ☐ Fix leaks in toilets, faucets and pipes right away.
- ☐ Only run the dishwasher when it is full.
- ☐ Presoak utensils and dishes in ponded water instead of using a running water rinse.
- ☐ Install low-flow faucet aerators and showerheads.
- ☐ Keep hot water pipes insulated.
- ☐ Clean equipment and areas, using dry methods (scraping, sweeping and shoveling) whenever possible.
- ☐ When washing, use high pressure, low volume washing equipment with minimal or no detergents.
- ☐ Plant hardy, native vegetation adapted to the local climate and rainfall.
- ☐ Use mulch around plants and trees to retain moisture.
- ☐ Keep sprinklers and hoses directed at grassy areas and not the pavement when watering.
- ☐ Water during cooler parts of the day (before 10:00 A.M and after 5:00 P.M.) to minimize evaporation loss.
- ☐ Do not water on windy days.
- ☐ Use drip and other high efficiency irrigation devices in lieu of sprinklers.
- ☐ Collect rainwater for irrigating or other non-potable uses.
- ☐ When mowing lawn areas and playing fields, set the mower blades to 2-3 inches high to help shade the soil and improve moisture retention.



Did you know? Fresh water is becoming an increasingly scarce resource. It has been estimated that water usage at schools can be reduced by 30 percent by implementing modest water saving methods. These reductions can cut operating expenses and help students better understand ways to conserve resources.

For more information:

U.S. EPA Region 10, Water Conservation Tips for Schools
http://www.epa.gov/region01/eco/drinkwater/water_conservation_schools.html

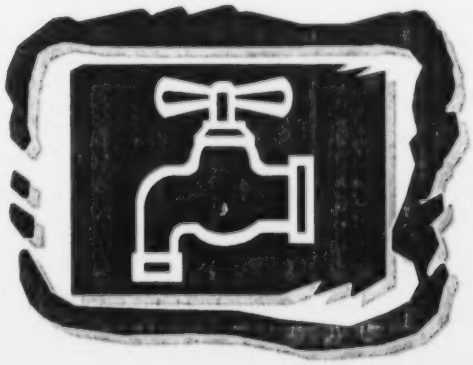
Maryland Department of Environment, Water Saving Tips for Schools and Colleges
http://www.mde.state.md.us/Programs/WaterPrograms/Water_Conservation/Business_Tips/schools.asp

Massachusetts Water Resources Authority, Water Efficiency & Management in Schools, Colleges and Athletic Facilities
http://www.p2pays.org/ref/05/04650.htm

North Carolina Department of Natural Resources, Division of Pollution Prevention and Environmental Assistance, Water Conservation Checklist: Schools/Educational Facilities
http://www.p2pays.org/search/pdfframe.asp?pdfurl=/ref/23/22009.pdf

U.S. EPA, Cleaner Water Through Conservation
http://www.epa.gov/OW/you/intro.html

WaterWiser: the Water Efficiency Clearinghouse
http://www.waterwiser.org/



Building Construction/Renovation

☐ Orient buildings to catch breezes, minimize heat gain and take advantage of natural shading and light.

☐ Preserve existing vegetative cover and trees, along streams and other natural waterways to reduce storm water runoff. Design in bio-swales instead of ditches to help treat runoff as it passes through vegetation.

☐ Ensure that walls, floors, roofs and windows are as energy efficient as possible.

Did you know? In many cases, total construction costs for energy-efficient schools are the same as costs for traditional schools because they cost less to operate over their lifetime.

☐ Use high efficiency HVAC equipment that is "right sized" for the estimated demands of the facility. Use economizers and other controls that optimize system performance.

☐ Use a geothermal system to heat and cool your school.

☐ Design for good indoor air quality. Select building materials to limit the introduction of pollutants into the building in the first place.

☐ Specify particular building materials with recycled content, such as concrete aggregate, carpeting, insulation, ceiling tiles, drywall, floor tile, playground surfacing and parking stops.

☐ Consider wood products produce from sustainably managed forests.

☐ Use durable materials like linoleum sheet flooring made from natural sources.

☐ Maximize the use of natural daylight in building interiors as a source of ambient light.

Did you know? In a study of the Capistrano, California School District, it was found that daylighting not only can save schools money, but also can enhance student performance in the classroom.

☐ Consider on-site renewable energy like solar hot water and photovoltaics to generate a portion of your school's energy use. Use the project as an opportunity to teach students about renewable energy resources.

☐ Use water efficient plumbing fixtures, such as aerators and self-closing or electronic faucets for lavatories.

☐ Equip locker room showers with push button or timed on/off operation.

- ☐ Set high lighting efficiency standards, such as high efficiency lamps, reflectors and ballasts. Specify smart controls such as occupancy sensors and daylight dimming.
- ☐ Do not over-illuminate. Lighting levels should be tailored to the type of task being performed and the function off the illuminated space.
- ☐ Develop optimum design criteria for insulation and windows. Do not rely on code minimums.
- ☐ Specify light-emitting diodes or LED exit lights.
- ☐ Direct exterior lighting downward to reduce light pollution and allow the use of lower wattage lamps.
- ☐ Recycle demolition and construction waste, whenever possible.
- ☐ Design pedestrian and bike-friendly features.
- ☐ Consider implementing a building commissioning plan to ensure installed components or systems meet the intent of the original design.

For more information:

Seattle City Light, High Performance Buildings and Better Learning Environments
www.cityofseattle.net/light/conserve/sustainability/studies/cv5_sl.htm

Collaborative for High Performance Schools, Best Practices Manual
http://www.eley.com/chps/overview/index.htm

Sustainable Buildings Industry Council, High Performance School Buildings Resource and Strategy Guide
http://www.sbicouncil.org/store/resources.php

National Clearinghouse for Educational Facilities, Resource Lists
http://www.edfacilities.org/rl/high_performance.cfm

Alliance to Save Energy, Sustainable School Construction
http://www.ase.org/greenschools/newconstruction2.htm#what

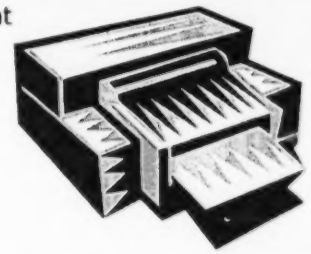
Illinois Department of Commerce and Community Affairs, Renewable Energy Grants and Rebate Applications
http://www.commerce.state.il.us/com/energy/alternate.html

Illinois Clean Energy Community Foundation, Renewable Energy Program and School Lighting Upgrades
http://www.illinoiscleanenergy.org/

Interstate Renewable Energy Council, Schools Going Solar
http://irecusa.org/schools/

Purchasing

- ☐ Review purchasing records, and consider disposal costs and costs for cleaning up accidents when evaluating products.
- ☐ Order print jobs on post-consumer recycled paper and specify that such jobs be double-sided wherever possible.
- ☐ Purchase Energy Star™ copiers, fax machines, computers and printers that power down when not in use. Specify energy efficient dishwashers and refrigerators.



- ☐ Use vegetable oil or water-based ink for printing.
- ☐ Purchase supplies and equipment made with recycled content materials (i.e., paper products, engine oil, paints, office products, carpeting, building materials and outdoor benches/tables).
- ☐ Buy products with less packaging or in returnable containers.
- ☐ Avoid buying products that are not easily recyclable in your area.
- ☐ Consider remanufactured items, such as recharged toner cartridges, re-formatted computer disks and returnable office equipment.
- ☐ Instead of paper, switch to cloth roll towels and/or air dryers in the restrooms, or switch to a dispenser that is not so generous with paper towels.
- ☐ Use water-based paints, and non/less-toxic floor cleaners and desk cleaners.

Did you know? A ton of paper made from 100 percent recycled paper, as compared to virgin paper, saves the equivalent of 4,100 kilowatt-hours of energy, 7,000 gallons of water, 60 pounds of air emissions, and 3 cubic yards of landfill space.

- ☐ Use products with toxic ingredients as infrequently as possible. Choose the least toxic product available for each task.
- ☐ Arrange for an expert training by vendors for new, complex equipment.
- ☐ Inspect deliveries on arrival.
- ☐ Consider renting or leasing infrequently used equipment.

For more information:

U.S. General Services Administration, Environmental Products and Services Guide
http://hydra.gsa.gov/planetgsa/buy/buy.htm

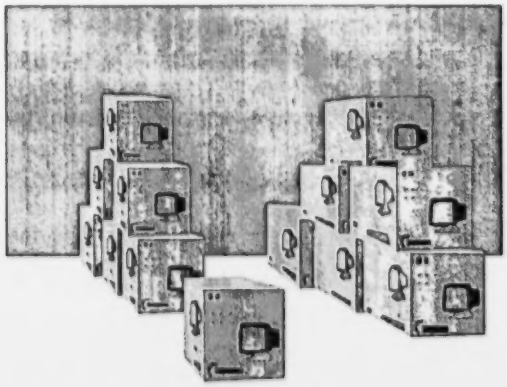
Green Seal, Product Recommendations
http://www.greenseal.org/recommendations.htm

U.S. EPA, Environmentally Preferable Purchasing
http://www.epa.gov/opptintr/epp/

King County (WA), Environmental Purchasing
http://www.metrokc.gov/procure/green/index.htm

Solid Waste Management Coordinating Board (MN), Environmentally Preferable Purchasing Guide
http://www.swmcb.org/EPPG/default.htm

Buy Recycled Business Alliance, Growing a Buy Recycled Purchasing Program: A Manager's Guide
http://www.nrc-recycle.org/brba/primer/brbamgrguide.PDF



Pest Management

- ☐ Practice good sanitation and proper maintenance of structures and grounds.
- ☐ Caulk and seal structural cracks where pests can enter.
- ☐ Keep lockers and the building clean and dry.
- ☐ Fix plumbing leaks and other moisture problems.
- ☐ Monitor frequently for signs of pests and keep records of pest populations.
- ☐ Identify injury and action levels for each pest species.
- ☐ Use non-chemical pest control methods (trapping, swatting, hand removal, barriers, attractants, etc.).

- ☐ Specify criteria for use of pest management methods that include use of natural or low toxicity pesticides.
- ☐ Only spray pesticides when children are out of school.
- ☐ Apply the proper amount of product required and wear protective equipment. More is not necessarily better.
- ☐ Store pesticides in leak-proof containers in a secure place.

For more information:

Illinois Department of Public Health, A Practical Guide to Management of Common Pests in Schools and Integrated Management of Structural Pests in Schools
http://www.idph.state.il.us/envhealth/entpestfshts.htm

Wisconsin Department of Agriculture, Trade, and Consumer Protection and University of Wisconsin Extension, School Integrated Pest Management Manual
http://ipcm.wisc.edu/programs/school/about.htm

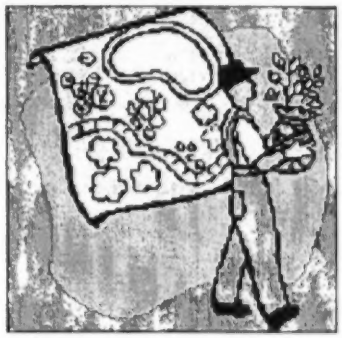
Illinois Safer Pest Control Project, Integrated Pest Management for Schools
http://www.spcpweb.org/school_ipm.html

The IPM Institute of North America, IPM for School Landscapes and Grounds
http://www.ipminstitute.org/school_grounds.htm

U.S. EPA Region V, Pollution Prevention Education Toolbox, Pesticide Reduction
http://www.epa.gov/reg5rcra/wptdiv/p2pages/pestici.pdf

Groundskeeping

- ☐ Cut grass on regular basis and remove no more than one-third of the grass blade at any one time to maintain good root growth.
- ☐ Keep mower blades sharp.
- ☐ Leave grass clippings on the ground if your lawn is mowed regularly and you follow the "one-third" rule to produce short clippings that decompose quickly. If you collect grass clippings, consider composting your clippings.
- ☐ Buy a mulching mower when you update your equipment.
- ☐ Increase water penetration into soil by aerating every 2-3 years.
- ☐ Preserve local vegetation in place, especially mature trees.
- ☐ Choose trees, bushes and shrubs that require minimal pruning.
- ☐ Conserve existing natural areas and restore damaged ones.
- ☐ Landscape with slow growing, drought tolerant native plants or groundcovers that require less fertilizer and pest control measures. Consult with your local university or county extension program.



- ☐ Use a minimal amount of fertilizers on school grounds, preferably a slow-release product. Consult with local extension program on how often and what time of year to fertilize.
- ☐ Apply herbicides only according to manufacturer's direction and only as necessary. Apply only at a time when wind drift and runoff losses are unlikely.
- ☐ Select the most species-specific, least damaging treatment for pest and weed control.
- ☐ Practice spot application where a problem exists instead of spraying over an entire area.

For more information:

University of Illinois Extension, Integrated Pest Management for Lawns
http://web.aces.uiuc.edu/vista/pdf_pubs/LAWNIPM.pdf

U.S. EPA, A Sourcebook on Natural Landscaping for Public Officials
http://www.epa.gov/glnpo/greenacres/toolkit/index.html

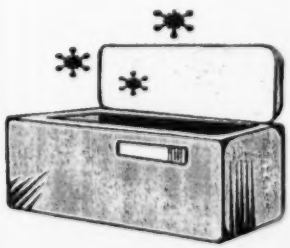
University of Illinois Extension, Turfgrass Extension and Outreach
http://www.turf.uiuc.edu/extension/extension.html

Illinois Department of Natural Resources, School Yard Habitat Grant Program
http://dnr.state.il.us/entice/faqs.htm

University of Minnesota, Sustainable Urban Landscape Information Series
http://www.sustland.umn.edu/

Food Service

- ☐ Print daily specials on a chalkboard or a dry-ease board rather than printing daily specials on new sheets of paper.
- ☐ Use refillable condiment bottles or containers instead of single-use packaging, and refill from bulk containers.
- ☐ Use washable wiping cloths instead of disposables.
- ☐ Purchase reusable coffee filters and compost the grounds.
- ☐ Place rubber mats around bus and dishwashing stations to reduce china and glass breakage.
- ☐ Work with suppliers to take back cardboard boxes or provide supplies in reusable containers, whenever possible.
- ☐ Provide employees with permanent-ware mugs or cups for their drinks.
- ☐ Serve straws and napkins from health department-approved dispensers rather than pre-wrapped.
- ☐ Rotate perishable stocks at each delivery to minimize waste from spoilage.
- ☐ Keep records of the demand for particular foods and use them in menu planning.
- ☐ Date items when delivered and use what was delivered first ("first-in, first-out").
- ☐ Store raw vegetables in reusable airtight containers to prevent spoilage.
- ☐ Reuse large containers for storage.
- ☐ Find local composting opportunities or animal farms that will accept non-edible foods.
- ☐ Avoid purchasing items with excessive packaging.
- ☐ Use dispenser items, such as juices or hot chocolate in concentrated or bulk form.
- ☐ Establish a routine cleaning and maintenance schedule for all equipment.



- ☐ When replacing equipment, buy energy and water conserving appliances like dishwashers, refrigerators and freezers.
- ☐ Clean up spills with a squeegee, broom or vacuum to avoid hosing materials down the floor drain.

For more information:

North Carolina Department of Environmental and Natural Resources, Water Management Options, Kitchen and Food Preparation
http://www.p2pays.org/search/pdfframe.asp?pdfurl=/ref/04/03103.pdf

Inform Inc., Waste at Work: Prevention Strategies for the Bottom Line, Food Services
http://www.informinc.org/waw4.pdf

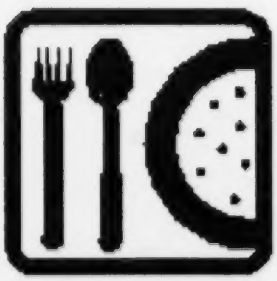
P2RX, Waste Reduction Resource Center, Food Service – P2 Opportunities
http://wrrc.p2pays.org/p2rx/subsection.asp?hub=448&subsec=4&nav=4

Resource Recycling (February 1995), Food Choices in Schools: Taste Great, Less Waste!
http://www.p2pays.org/search/pdfframe.asp?pdfurl=/ref/06/05976.pdf

Inform Inc., Getting an "A" for Lunch: Smart Strategies in Reducing Waste in Campus Dining
http://www.p2pays.org/search/pdfframe.asp?pdfurl=/ref/04/03993.pdf

North Carolina Department of Environmental and Natural Resources, Waste Reduction for the Food Service Industry
http://www.p2pays.org/ref/14/13004_files/13004_files/frame.htm

U.S. EPA, Greening Your Purchase of Food Serviceware
http://www.p2pays.org/ref/13/12198.pdf



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